

**MODEL STATEMENT OF WORK
FOR CONDUCTING FEASIBILITY STUDIES**

PURPOSE

The purpose of this feasibility study is to develop and evaluate remedial alternatives for Arkwood, Inc. MMI will furnish the necessary personnel, materials, and services necessary to prepare the remedial action feasibility study, except as otherwise specified.

SCOPE

The feasibility study consists of eight tasks:

- Task 8 - Description of Proposed Response
- Task 9 - Preliminary Remedial Technologies
- Task 10 - Development of Alternatives
- Task 11 - Initial Screening of Alternatives
- Task 12 - Evaluation of the Alternatives
- Task 13 - Preliminary Report
- Task 14 - Final Report
- Task 15 - Additional Requirements.

A work plan that includes a detailed technical approach, personnel requirements, and schedules will be submitted for the proposed feasibility study.

TASK 8 - DESCRIPTION OF CURRENT SITUATION

Information on the site background, the nature and extent of the problem, and previous response activities presented in Task 1 of the remedial investigation may be incorporated by reference. Any changes to the original project scope described in the Task 1 description should be discussed and justified based on results of the remedial investigation.

Following this summary of the current situation, a site-specific statement of purpose for the response, based on the results of the remedial investigation, should be presented. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by remedial alternatives.

TASK 9 - PRELIMINARY REMEDIAL TECHNOLOGIES

Based on the site-specific problems and statement of purpose identified in Task 8, develop a master list of potentially feasible technologies. These technologies will include both on-site and off-site remedies, depending on site problems. The master list will be screened based on site conditions, waste characteristics, and technical requirements, to eliminate or modify those technologies that may prove extremely difficult to implement, will require unreasonable time periods, or will rely on insufficiently developed technology.

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TASK 10 - DEVELOPMENT OF ALTERNATIVES

Based on the results of the remedial investigation and consideration of preliminary remedial technologies (Task 9), develop a limited number of alternatives for source control or off-site remedial actions, or both, on the basis of objectives established for the response.

a. Establishment of Remedial Response Objectives

Establish site-specific objectives for the response. These objectives will be based on public health and environmental concerns, the description of the current situation (from Task 1), information gathered during the remedial investigation, section 300.68 of the National Contingency Plan (NCP), EPA's interim guidance, and the requirements of any other applicable EPA, Federal, and State environmental standards, guidance, and advisories as defined under EPA's CERCLA compliance policy. Objectives for source control measures should be developed to prevent or significantly minimize migration of contamination from the site. Objectives for management of migration measures should prevent or minimize impacts of contamination that has migrated from the site. Preliminary cleanup objectives will be developed in consultation with EPA and the State.

b. Identification of Remedial Alternatives

Develop alternatives to incorporate remedial technologies (from Task 9), response objectives, and other appropriate considerations into a comprehensive, site-specific approach. Alternatives developed should include the following (as appropriate):

- ° Alternatives for off-site treatment or disposal, as appropriate.
- ° Alternatives which attain applicable and/or relevant Federal public health or environmental standards.
- ° Alternatives which exceed applicable and/or relevant public health or environmental standards.
- ° Alternatives which do not attain applicable and/or relevant public health or environmental standards but will reduce the likelihood of present or future threat from the hazardous substances. This must include an alternative which closely approaches the level of protection provided by the applicable or relevant standards
- ° No action.

There may be overlap among the alternatives developed. Further, alternatives outside of these categories may also be developed, such as non-cleanup alternative (e.g., alternative water supply, relocation). The alternatives shall be developed in close consultation with EPA and the State. Document the rationale for excluding any technologies identified in Task 9 in the development of alternatives.

TASK 11 - INITIAL SCREENING OF ALTERNATIVES

The alternatives developed in Task 10 will be screened by the Respondents to eliminate those that are clearly infeasible or inappropriate, prior to undertaking detailed evaluations of the remaining alternatives.

Considerations to be Used in Initial Screening

Three broad considerations must be used as a basis for the initial screening: cost, public health, and the environment. More specifically, the following factors must be considered:

1. Environmental Protection. Only those alternatives that satisfy the response objectives and contribute substantially to the protection of public health, welfare, or the environment will be considered further. Source control alternatives will achieve adequate control the source of contamination. Additionally, alternatives which address the migration of contaminants will minimize or mitigate the threat of harm to public health, welfare, or the environment.
2. Environmental Effects. Alternatives posing significant adverse environmental effects will be excluded.
3. Technical Feasibility. Technologies that may prove extremely difficult to implement, will not achieve the remedial objectives in a reasonable time period, or will rely upon unproven technology should be modified or eliminated.
4. Cost. An alternative whose cost far exceeds that of other alternatives will usually be eliminated unless other significant benefits may also be realized. Total costs will include the cost of implementing the alternatives and the cost of operation and maintenance.

The cost screening will be conducted only after the environmental and public health screenings have been performed.

TASK 12 - EVALUATION OF THE ALTERNATIVES

Evaluate the cost-effectiveness of alternative remedies that pass through the initial screening in Task 11. Alternative evaluation will be preceded by detailed development of the remaining alternatives.

a. Technical Analysis

The Technical Analysis will, as a minimum:

1. Describe appropriate treatment, storage, and disposal technologies.
2. Discuss how the alternative does (or does not) comply with specific requirements of other environmental programs. When an alternative does not comply, discuss how the alternative prevents or minimizes the migration of wastes and public health or environmental impacts and describe special design needs that could be implemented to achieve compliance.
3. Outline operation, maintenance, and monitoring requirements of the remedy.
4. Identify and review potential off-site disposal facilities to ensure compliance with applicable RCRA and other EPA environmental program requirements, both current and proposed. Potential disposal facilities should be evaluated to determine whether off-site management of site wastes could result in a potential for a future release from the disposal facility.
5. Identify temporary storage requirements, off-site disposal needs, and transportation plans.
6. Describe whether the alternative results in permanent treatment or destruction of the wastes, and, if not, the potential for future release to the environment.
7. Outline safety requirements for remedial implementation (including both on-site and off-site health and safety considerations).
8. Describe how the alternative could be phased into individual operable units. The description should include a discussion of how various operable units of the total remedy could be implemented individually or in groups, resulting in a significant improvement to the environment or savings in cost.
9. Describe how the alternative could be segmented into areas to allow implementation in differing phases.
10. Describe special engineering requirements or site preparation considerations regarding the remedy.

b. Environmental Analysis

Perform an Environmental Assessment (EA) for each alternative. The EA should focus on the site problems and pathways of contamination actually addressed by each alternative. The EA for each alternative will include, at a minimum, an evaluation of beneficial effects of the alternatives, adverse effects of the alternatives, and an analysis of measures to mitigate adverse effects. The no-action alternative will be fully evaluated to describe the current site situation and anticipated environmental conditions if no actions are taken. The no-action alternative will serve as the baseline for the analysis.

c. Public Health Analysis

Each alternative will be assessed in terms of the extent to which it mitigates long-term exposure to any residual contamination and protects public health both during and after completion of the remedial action. The assessment will describe the levels characteristics of contaminants on-site, potential exposure routes, and potentially affected population. The effect of "no action" should be described in terms of short-term effects (e.g., lagoon failure), long-term exposure to hazardous substances, and resulting public health impacts. Each remedial alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. The relative reduction in public health impacts for each alternative will be compared to the no-action level. For management of migration measures, the relative reduction in impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or guidelines acceptable to EPA. For source control measures or when criteria, standards, or guidelines are not available, the comparison should be based on the relative effectiveness of technologies. The no-action alternative will serve as the baseline for the analysis.

d. Institutional Analysis

Each alternative will be evaluated based on relevant institutional needs. Specifically, regulatory requirements, permits, community relations, and participating agency coordination will be assessed.

e. Cost Analysis

Evaluate the cost of each feasible remedial action alternative (and for each phase or segment of the alternative). The cost will be presented as a present worth cost and will include the total cost of implementing the alternative and the annual operating and maintenance costs. Both monetary costs and associated non-monetary costs will be included. A distribution of costs over time will be provided.

f. Evaluation of Cost-Effective Alternatives

Alternatives will be compared using technical, environmental, and economic criteria. At a minimum, the following areas will be used to compare alternatives:

1. Present Worth of Total Costs. The net present value of capital and operating and maintenance costs also must be presented.
2. Health Information. For the no-action alternative, EPA prefers a quantitative statement including a range estimate of maximum individual risks. Where quantification is not possible, a qualitative analysis may suffice. For source control options, a quantitative risk assessment is not required. For management of migration measures, present a quantitative risk assessment including a range estimate of maximum individual risks.
3. Environmental Effects. Only the most important effects or impacts should be summarized. Reference can be made to supplemental information arrayed in a separate table, if necessary.
4. Technical Aspects of the Remedial Alternatives. The technical aspects of each remedial alternative relative to the others should be clearly delineated. Such information generally will be based on the professional opinion of the Engineer regarding the site and the technologies comprising the remedial alternative.
5. Information on the Extent to Which Remedial Alternatives Meet the Technical Requirements and Environmental Standards of Applicable Environmental Regulations. This information should be arrayed so that differences in how remedial alternatives satisfy such standards are readily apparent. The general types of standards that may be applicable at the site include:
 - a. RCRA design and operating standards; and
 - b. Drinking water standards and criteria.
6. Information on Community Effects. The type of information that should be provided is the extent to which implementation of a remedial alternative disrupts the community (e.g., traffic, temporary health risks, and relocation).
7. Other Factors. This category of information would include such things as institutional factors that may inhibit implementing a remedial alternative and any other site-specific factors identified in the course of the detailed analysis that may influence which alternative is eventually selected.

TASK 13 - PRELIMINARY REPORT

Prepare a preliminary report presenting the results of Tasks 8 through 13. Submit copies of the preliminary report to EPA and the State of Arkansas.

TASK 14 - FINAL REPORT

Prepare a final report for submission to EPA and the State. The report will include the results of Tasks 8 through 13, and should include any supplemental information in appendices.